

1. A method to design and verify a multi-power integrated circuit device comprising:

providing a multi-power gate-level netlist comprising multi-power net information;

5 translating said multi-power gate-level netlist to thereby create a non-multi-power gate-level netlist wherein said translating comprises removing said multi-power net information;

placing and routing circuit cells to create a physical
10 view of said multi-power integrated circuit device wherein said placing and routing uses said non-multi-power gate-level netlist and wherein text labels for said multi-power net information are attached to said physical view; and

comparing said physical view and said multi-power gate
15 level netlist to verify the correctness of said physical view and to complete said design and verification of said multi-power integrated circuit device.

2. The method according to Claim 1 wherein said multi-power integrated circuit device comprises input/output (I/O) cells having multiple power supplies.

3. The method according to Claim 2 wherein said multiple power supplies comprise a first supply of between about 2.5 Volts and a second supply of about 3.3 Volts.

4. The method according to Claim 1 wherein said multi-power integrated circuit device comprises analog circuits and digital circuits.

5. The method according to Claim 1 wherein said step of placing and routing further comprises clock tree synthesis (CTS) placement and routing.

6. The method according to Claim 1 further comprising:

clock tree synthesized (CTS) placing and routing of said circuit cells after said step of placing and routing circuit cells to create a physical view of said multi-power integrated circuit device wherein said CTS placing and routing updates said physical view and modifies said non-multi-power gate-level netlist to thereby create a CTS modified non-multi-power gate-level netlist; and

inserting said includes multi-power net information into said CTS modified non-multi-power gate-level netlist to create an updated said multi-power gate-level netlist prior to said step of comparing said physical view and said

multi-power gate-level netlist to verify the correctness of
said physical view and to complete said design and
15 verification of said multi-power integrated circuit device.

7. The method according to Claim 6 further comprising:

comparing said multi-power gate-level netlist and said
updated multi-power gate-level netlist to thereby verify
that no errors have been introduced after said step of
5 inserting said includes multi-power net information into
said CTS modified non-multi-power gate-level netlist.

8. The method according to Claim 1 further comprising:

simulating said multi-power gate-level netlist; and
thereafter performing static timing analysis on said
multi-power gate-level netlist prior to said step of
5 providing said multi-power gate-level netlist.

9. A method to design and verify a multi-power integrated
circuit device comprising:

providing a multi-power gate-level netlist wherein
said multi-power gate-level netlist includes multi-power
5 net information;

translating said multi-power gate-level netlist to
thereby create a non-multi-power gate-level netlist wherein

said translating comprises removing said multi-power net information;

10 placing and routing circuit cells to create a physical view of said multi-power integrated circuit device wherein said placing and routing uses said non-multi-power gate-level netlist and wherein text labels for said multi-power net information are attached to said physical view;

15 clock tree synthesized (CTS) placing and routing of said circuit cells after said step of placing and routing circuit cells to create a physical view of said multi-power integrated circuit device wherein said CTS placing and routing updates said physical view and modifies said non-
20 multi-power gate-level netlist to thereby create a CTS modified non-multi-power gate-level netlist;

 inserting said includes multi-power net information into said CTS modified non-multi-power gate-level netlist to create an updated said multi-power gate-level netlist;
25 and comparing said physical view and said updated multi-power gate-level netlist to verify the correctness of said physical view and to complete said design and verification of said multi-power integrated circuit device.

10. The method according to Claim 9 wherein said multi-power integrated circuit device comprises input/output (I/O) cells having multiple power supplies.

11. The method according to Claim 10 wherein said multiple power supplies comprise a first supply of between about 2.5 Volts and a second supply of about 3.3 Volts.

12. The method according to Claim 9 wherein said multi-power integrated circuit device comprises analog circuits and digital circuits.

13. The method according to Claim 9 further comprising:

comparing said multi-power gate-level netlist and said updated multi-power gate-level netlist to thereby verify that no errors have been introduced after said step of
5 inserting said includes multi-power net information into said CTS modified non-multi-power gate-level netlist.

14. The method according to Claim 9 further comprising:

simulating said multi-power gate-level netlist; and
thereafter performing static timing analysis on said multi-power gate-level netlist prior to said step of
5 providing said multi-power gate-level netlist.

15. An apparatus to design and verify a multi-power integrated circuit device comprising:

a means of storing a multi-power gate-level netlist that is provided;

5 a means of translating said multi-power gate-level netlist to thereby create a non-multi-power gate-level netlist wherein said means of translating comprises removal of said multi-power net information;

a means of placing and routing circuit cells to create
10 a physical view of said multi-power integrated circuit device wherein said means of placing and routing uses said non-multi-power gate-level netlist and wherein text labels for said multi-power net information are attached to said physical view; and

15 a means of comparing said physical view and said multi-power gate-level netlist to thereby verify the correctness of said physical view and to complete said design and verification of said multi-power integrated circuit device.

16. The apparatus according to Claim 15 wherein said means of translating comprises a software program running on a computer processing unit.

17. The apparatus according to Claim 15 wherein said means of comparing comprises a logic versus schematic (LVS) software program running on a computer processing unit.

18. The apparatus according to Claim 15 further comprising:

a means of performing a clock tree synthesized (CTS) placing and routing of said circuit cells to create a physical view of said multi-power integrated circuit device wherein said means of performing CTS placing and routing updates said physical view and modifies said non-multi-power gate-level netlist to thereby create a CTS modified non-multi-power gate-level netlist; and

a means of inserting said multi-power net information into said CTS modified non-multi-power gate-level netlist to create an updated said multi-power gate-level netlist for use by said means of comparing said physical view and said multi-power gate-level netlist to verify the correctness of said physical view and to complete said design and verification of said multi-power integrated circuit device.

19. The apparatus according to Claim 18 further comprising a means of comparing said multi-power gate-level netlist

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and said updated multi-power gate-level netlist to thereby verify that no errors have been introduced.

20. The apparatus according to Claim 15 further comprising a means of displaying said physical view of said multi-power integrated circuit device.